PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 990482PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US00/23420	International filing date *(day/month/year)* 25 AUGUST 2000	Priority date *(day/month/year)* 25 AUGUST 1999
International Patent Classification (IPC) or national classification and IPC IPC(7): H04B 7/155 and US Cl.: 370/223		
Applicant QUALCOMM INCORPORATED		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 61 sheets.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

   I ☒ Basis of the report

   II ☐ Priority

   III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability

   IV ☐ Lack of unity of invention

   V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☒ Certain documents cited

   VII ☒ Certain defects in the international application

   VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
22 MARCH 2001	30 JANUARY 2003
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer HUY VU Telephone No. (703) 305-6970

Form PCT/IPEA/409 (cover sheet) (July 1998)★

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US00/23420

I. Basis of the report

1 With regard to the **elements** of the international application:*

[X] the international application as originally filed

[X] the description:
pages 1-32 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

[X] the claims:
pages 33-34 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

[X] the drawings:
pages 1-10 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

[X] the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

[ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[ ] the language of publication of the international application (under Rule 48.3(b)).

[ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

[ ] contained in the international application in printed form.

[ ] filed together with the international application in computer readable form.

[ ] furnished subsequently to this Authority in written form.

[ ] furnished subsequently to this Authority in computer readable form.

[ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

[ ] The statement that the information recorded in computer readable form is identical to the writen sequence listing has been furnished.

4. [X] The amendments have resulted in the cancellation of:

[X] the description, pages NONE

[X] the claims, Nos. NONE

[X] the drawings, sheets/~~fig~~ NONE

5. [ ] This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

***Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US00/23420

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims	2-9	YES
	Claims	1	NO
Inventive Step (IS)	Claims	2-4	YES
	Claims	1, 5-9	NO
Industrial Applicability (IA)	Claims	1-9	YES
	Claims	NONE	NO

2. citations and explanations (Rule 70.7)

Claim 1 lacks novelty under PCT Article 33(2) as being anticipated by Anglin (WO 99/18684). Regarding claim 1, Anglin discloses allocating a reverse link within a band class, the reverse link communicatively coupling a base station and a mobile station (pg. 2 lines 1-6 under Disclosure). This allocation method comprising: transmitting first information on a multi-carrier forward link comprising multiple frequencies (pg. 5 lines 9-18); receiving said first information at said mobile station (pg. 5 lines 13-14) where users are equivalent to a mobile station; transmitting second information on said reverse link (pg. 5 lines 19-21) at one of said multiple frequencies (pg. 4 lines 7-9 and pg. 5 lines 21-22) (the forward link is in frequency bands 2.31-2.32 and 2.345-2.36 GHz while the reverse frequency range is 1KHz-3 GHz); and receiving said second information at said base station (pg. 5 lines 19-21) where the base station is taken to be the network management center.

Claims 5-9 lack an inventive step under PCT Article 33(3) as being obvious over Anglin (WO 99/18684) in view of Jensen et al. (USPN 5,648,955).

Regarding claim 5, Anglin does not disclose having the reverse link varied over the band class allocated to the mobile station. Jensen teaches "each user station may have a frequency synthesizers which can be programmed to receive and transmit on any one of 223 frequencies" (col. 6 lines 22-25). Although it is not explicitly stated that the reverse link can be varied only over the band class allocated to the mobile station, such a feature would not involve an inventive step because the mobile station wants to transmit information over the reverse link such that the base will detect it. This will occur if the transmission is within the band class allocated to the mobile station. Jensen does this to add flexibility to the communication system (col. 1 lines 49-50). To have the reverse link be varied over the band class allocated to the mobile station in order to increase the flexibility of the system would not involve an inventive step.

Regarding claim 6, Anglin in view of Jensen discloses limiting the number of multiple frequencies to only three (Jensen: col. 3 line 63-col. 4 line 5). Jensen does this to (Continued on Supplemental Sheet.)

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication Date *(day/month/year)*	Filing Date *(day/month/year)*	Priority date (valid claim) *(day/month/year)*

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure *(day/month/year)*	Date of written disclosure referring to non-written disclosure *(day/month/year)*

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof: the drawing includes the following reference sign(s) not mentioned in the description: part number 515 in Fig. 5a. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application.

The description is objected to as containing the following defect(s) under PCT Rule 66.2(a)(iii) in the form or contents thereof: on pg. 10 there is no description of Fig. 7. On page 12 line 13, the phrase ".1.95 MHz" should read "1.95 MHz." On page 22 lines 5 and 6, both references to "bit generator 504" should be "bit generator 514" so as to match the reference number seen in Fig. 5d. On page 29 line 16-17, the control processor should be labeled as 615 not 616 so as to match the reference number seen in Fig. 6a.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):
minimize interference between adjacent cells when having frequencies reused (col. 3 lines 49-51 and col. 3 line 63-col. 4 line 5). To have the multiple frequencies be limited to three frequencies to allow for minimization of interference between adjacent cells when implementing frequency reuse would not involve an inventive step.

Regarding claim 7, Anglin in view of Jensen discloses having the multiple frequencies be adjacent frequencies (Jensen: col. 3 lines 63-65). One reason that frequencies are placed adjacent to each other is to ensure that the entire frequency band is efficiently used. To have the frequencies adjacent to each other so that efficient use of the frequency band is realized would not involve an inventive step.

Regarding claim 8, Anglin in view of Jensen discloses that it is clear to those of ordinary skill in the art that air channels may be multiplexed using many means including FDMA by assigning air channels to differing frequency bands, CDMA by assigning air channels to differing spread-spectrum spreading codes, other multiplexing techniques (including TDMA), or combinations of multiplexing techniques (Jensen: col. 20 lines 52-62). To use differing techniques depending on the application and what multiplexing arrangement best fit that application would not involve an inventive step. To have multiple adjacent frequencies separate from another frequency supporting another type of channel in order to allow different application to be used with each application taking advantage of its most applicable multiplexing arrangement would not involve an inventive step.

Regarding claim 9, Anglin in view of Jensen discloses that the preferred embodiment of Jensen's system is implemented with TDMA or TDD (Jensen: col. 3 lines 36-40). Although Jensen does not specifically disclose using FDD because Jensen's disclosed embodiment only details TDMA/TDD, Jensen does disclose that the system can be implemented with FDMA techniques. If TDD can be implemented as well as TDMA in the system, it would not involve an inventive step if FDMA techniques are also possible that FDD could also be implemented within the system.

Claims 2-4 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest having the multiple frequencies support any combination of code channels.

---------- NEW CITATIONS ----------
US 5,648,955 A (JENSEN et al) 15 JULY 1997, see column 6, lines 22-25; column 1, lines 49-50; column 3, lines 49-65; column 20, line 52-62.